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United States Patent [19]**Regensburger**[11] **Patent Number:** **5,232,322**[45] **Date of Patent:** **Aug. 3, 1993**[54] **FASTENER**[75] **Inventor:** **Werner Regensburger, Rebstein, Switzerland**[73] **Assignee:** **Vereinigte Drahtwerke A.G., Biel, Switzerland**[21] **Appl. No.:** **719,023**[22] **Filed:** **Jun. 21, 1991**[30] **Foreign Application Priority Data**

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[51] **Int. Cl.⁵** **F16B 13/04**[52] **U.S. Cl.** **411/33; 411/353; 411/387; 411/510**[58] **Field of Search** 411/337, 29, 32, 33, 411/353, 352, 354, 517, 44, 57, 72, 75, 78, 79, 81, 83, 360, 385, 383, 999, 508, 511, 387, 510[56] **References Cited****U.S. PATENT DOCUMENTS**

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Primary Examiner—Rodney M. Lindsey*Attorney, Agent, or Firm*—Ladas & Parry[57] **ABSTRACT**

A plurality of anchoring members are threaded onto the shaft of the fastener. These anchoring members include an annular body and a spacer. The anchoring members are held between an abutment of the shaft and a locking section thereof fixed against an axial displacement thereon. The anchoring members are present as structural members which are separate from the shaft and are merely threaded onto the shaft. It is accordingly possible to use a large number of variously designed anchoring members together with only one shape of the shaft, which reduces considerably the costs of the production and increases the universality of the fastener. Specifically the shaft and the anchoring members may be made of a metal such that the fastener can display in comparison with plastic fasteners a much higher rigidity.

29 Claims, 6 Drawing Sheets